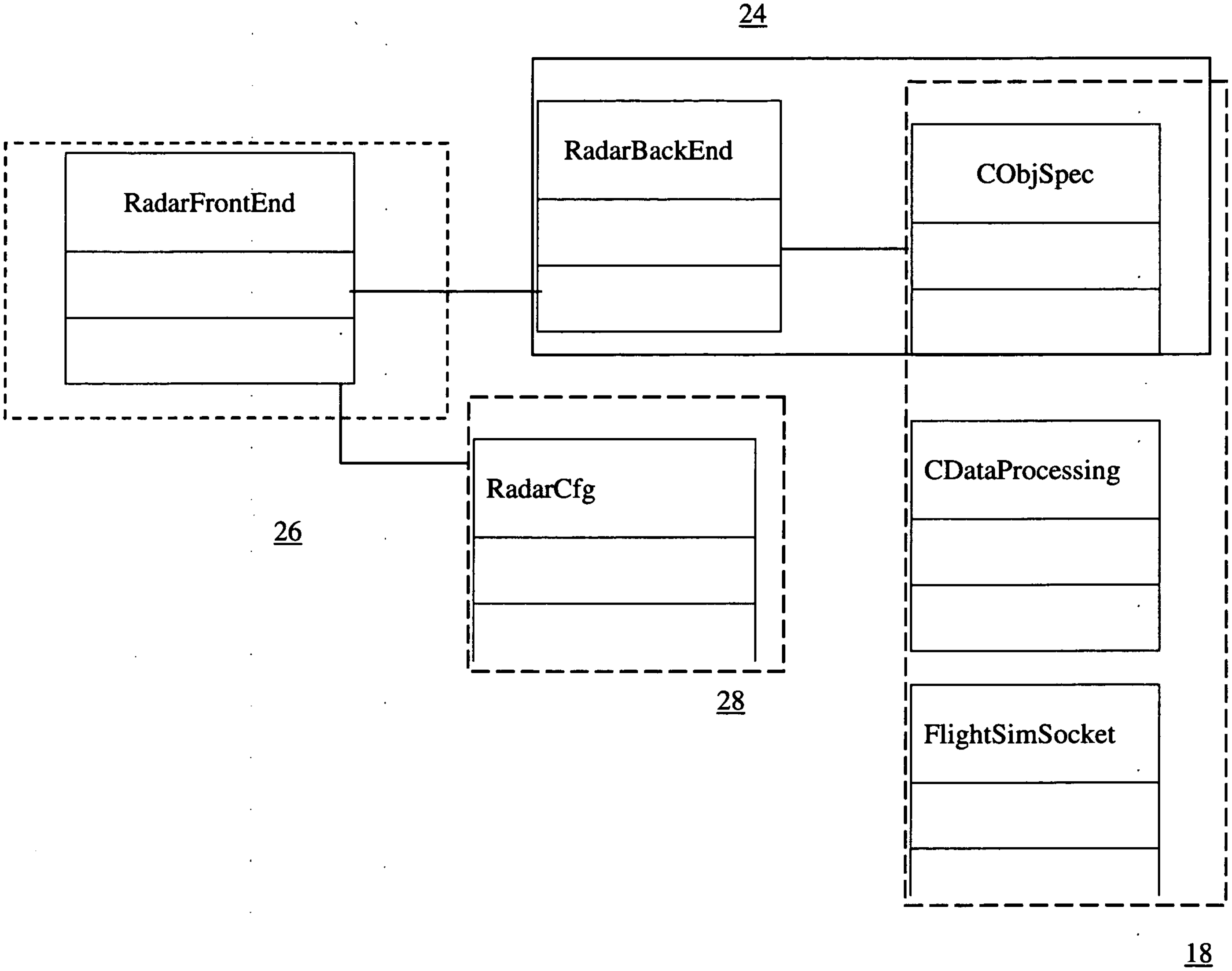
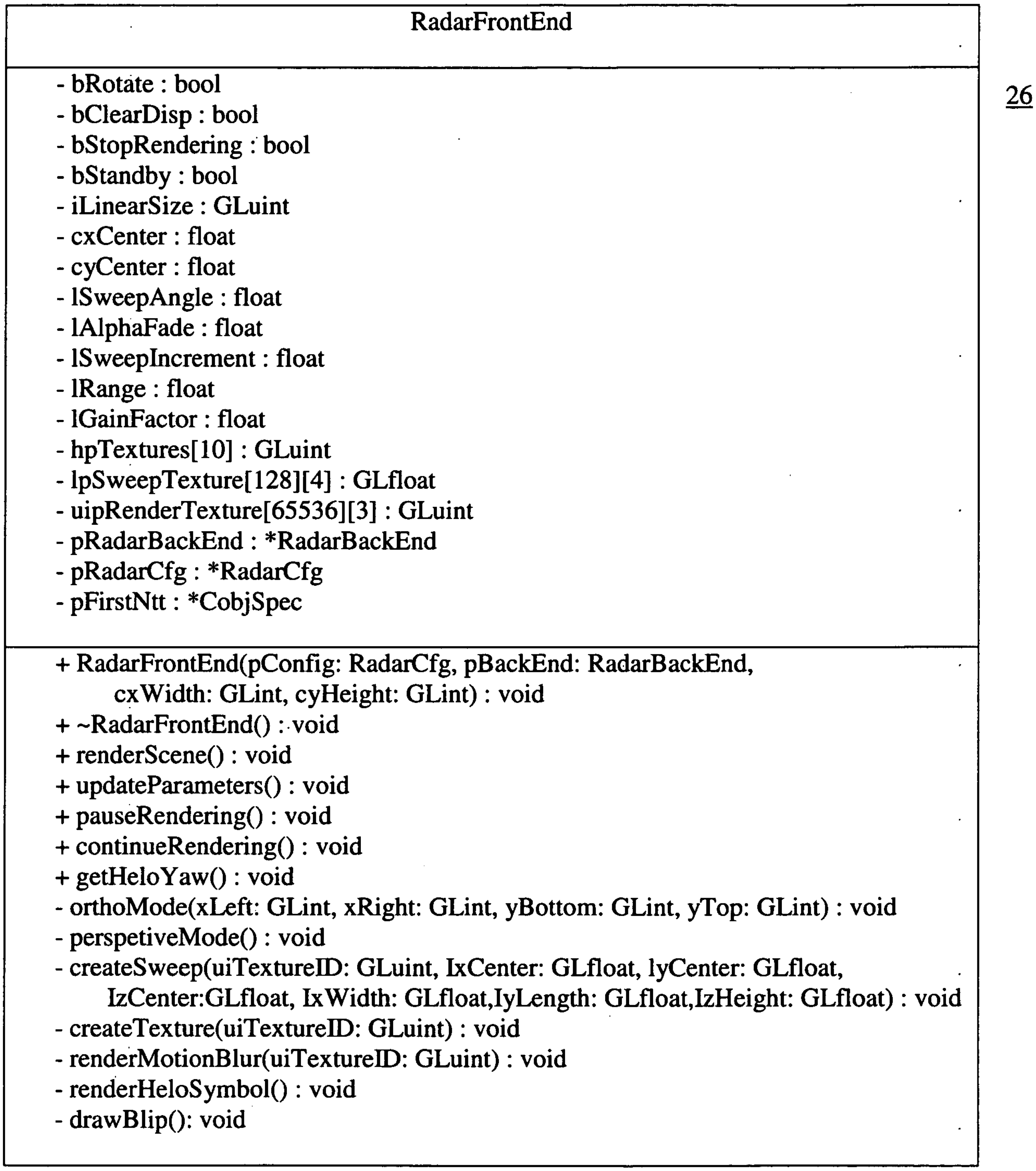
OIPE
IAP75
SEP 06 2005
PATENT & TRADEMARK OFFICE

FIG 4



OIPE IAP75
SEP 0 6 2005
PATENT & TRADEMARK OFFICE

FIG 4



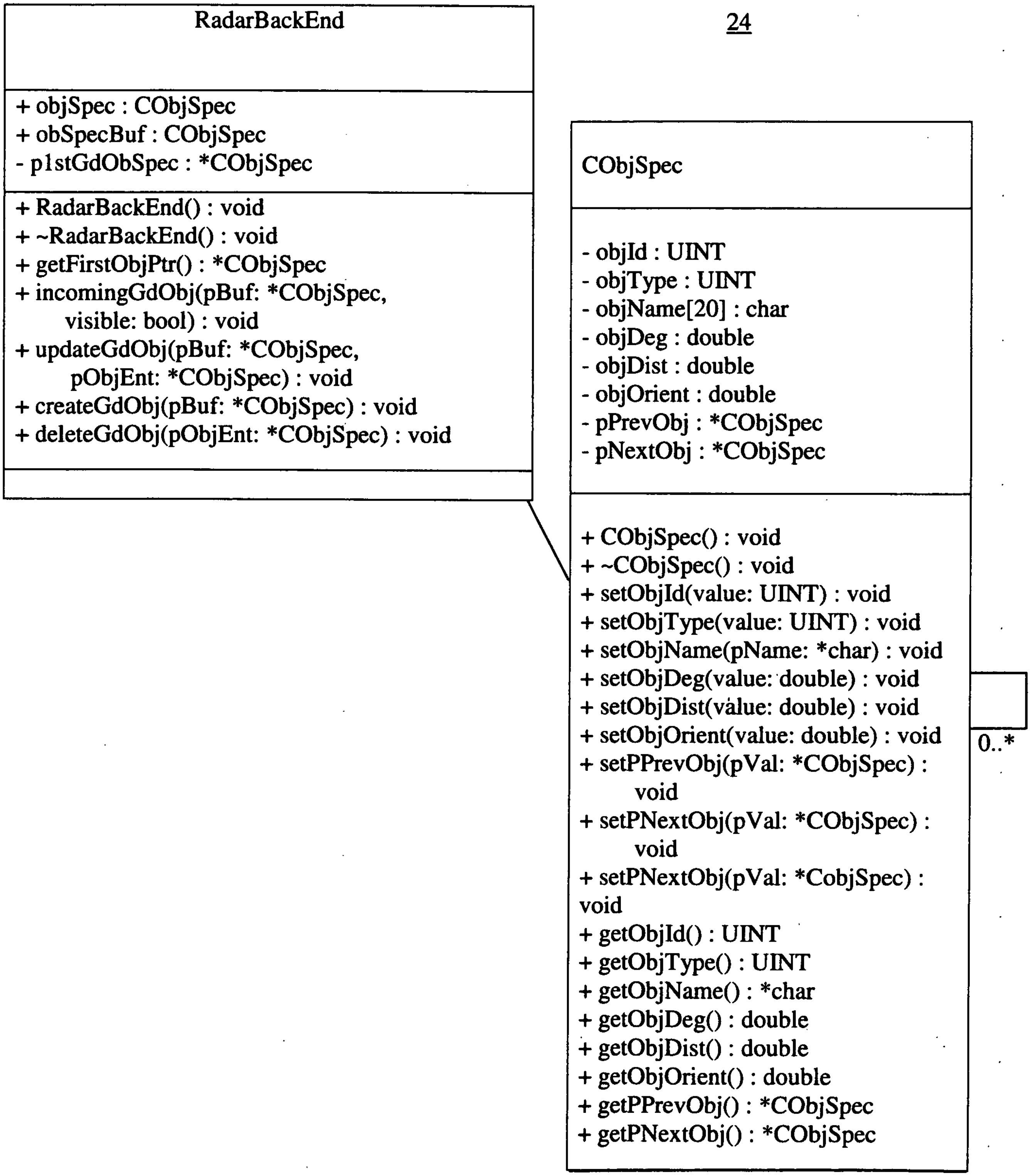
```
RadarFrontEnd

- bRotate : bool
- bClearDisp : bool
- bStopRendering : bool
- bStandby : bool
- iLinearSize : GLuint
- cxCenter : float
- cyCenter : float
- lSweepAngle : float
- lAlphaFade : float
- lSweepIncrement : float
- lRange : float
- lGainFactor : float
- hpTextures[10] : GLuint
- lpSweepTexture[128][4] : GLfloat
- uipRenderTexture[65536][3] : GLuint
- pRadarBackEnd : *RadarBackEnd
- pRadarCfg : *RadarCfg
- pFirstNtt : *CobjSpec

+ RadarFrontEnd(pConfig: RadarCfg, pBackEnd: RadarBackEnd,
      cxWidth: GLint, cyHeight: GLint) : void
+ ~RadarFrontEnd() : void
+ renderScene() : void
+ updateParameters() : void
+ pauseRendering() : void
+ continueRendering() : void
+ getHeloYaw() : void
- orthoMode(xLeft: GLint, xRight: GLint, yBottom: GLint, yTop: GLint) : void
- perspetiveMode() : void
- createSweep(uiTextureID: GLuint, IxCenter: GLfloat, lyCenter: GLfloat,
     IzCenter:GLfloat, IxWidth: GLfloat,IyLength: GLfloat,IzHeight: GLfloat) : void
- createTexture(uiTextureID: GLuint) : void
- renderMotionBlur(uiTextureID: GLuint) : void
- renderHeloSymbol() : void
- drawBlip(): void
```

OIPE
IAP75
SEP 0 6 2005
PATENT & TRADEMARK OFFICE

FIG 4



```
RadarBackEnd

+ objSpec : CObjSpec
+ obSpecBuf : CObjSpec
- p1stGdObSpec : *CObjSpec

+ RadarBackEnd() : void
+ ~RadarBackEnd() : void
+ getFirstObjPtr() : *CObjSpec
+ incomingGdObj(pBuf: *CObjSpec,
      visible: bool) : void
+ updateGdObj(pBuf: *CObjSpec,
      pObjEnt: *CObjSpec) : void
+ createGdObj(pBuf: *CObjSpec) : void
+ deleteGdObj(pObjEnt: *CObjSpec) : void
```

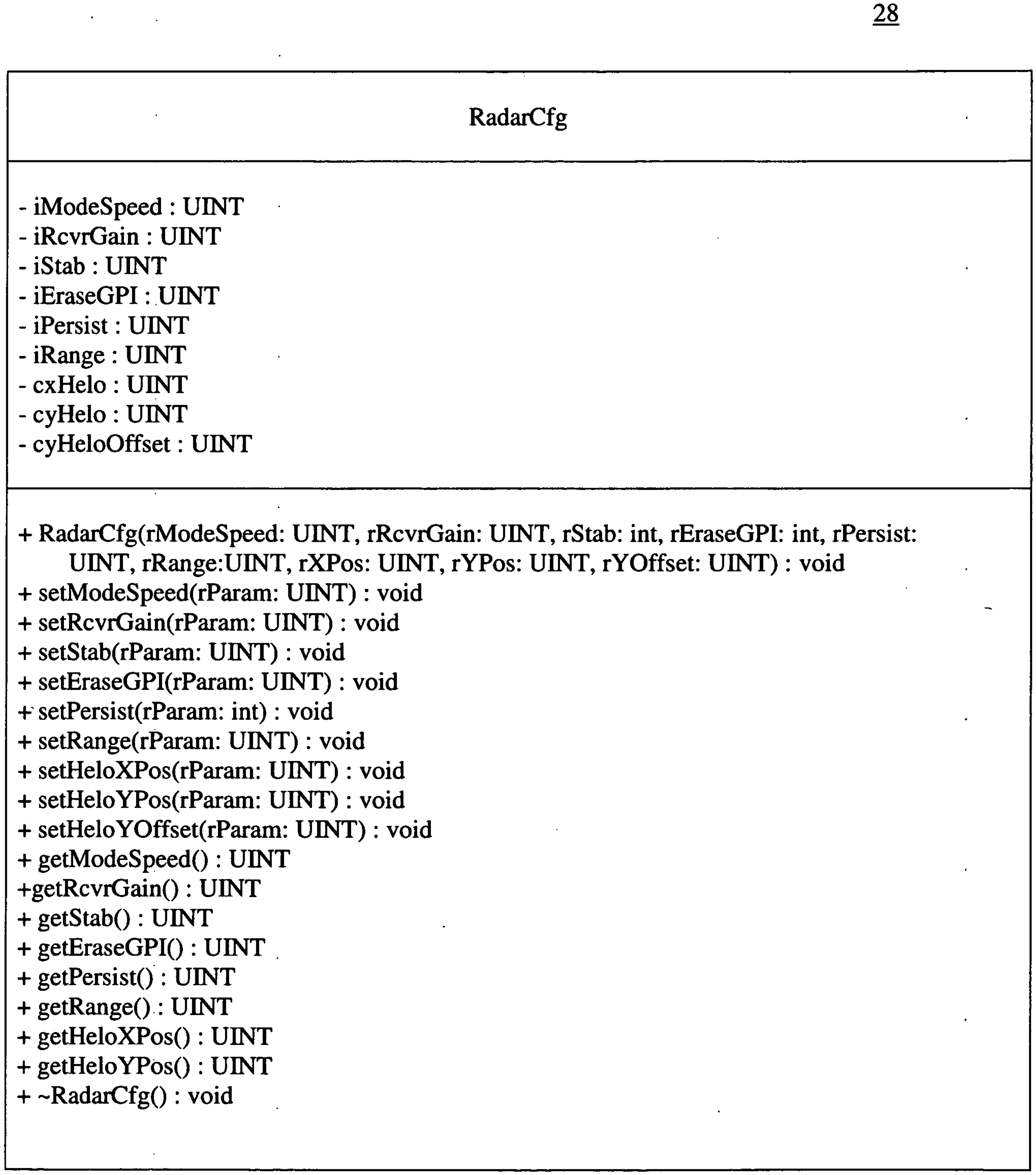
```
CObjSpec

- objId : UINT
- objType : UINT
- objName[20] : char
- objDeg : double
- objDist : double
- objOrient : double
- pPrevObj : *CObjSpec
- pNextObj : *CObjSpec

+ CObjSpec() : void
+ ~CObjSpec() : void
+ setObjId(value: UINT) : void
+ setObjType(value: UINT) : void
+ setObjName(pName: *char) : void
+ setObjDeg(value: double) : void
+ setObjDist(value: double) : void
+ setObjOrient(value: double) : void
+ setPPrevObj(pVal: *CObjSpec) :
      void
+ setPNextObj(pVal: *CObjSpec) :
      void
+ setPNextObj(pVal: *CobjSpec) :
void
+ getObjId() : UINT
+ getObjType() : UINT
+ getObjName() : *char
+ getObjDeg() : double
+ getObjDist() : double
+ getObjOrient() : double
+ getPPrevObj() : *CObjSpec
+ getPNextObj() : *CObjSpec
```

OIPE IAP75
SEP 06 2005
PATENT & TRADEMARK OFFICE

FIG 4



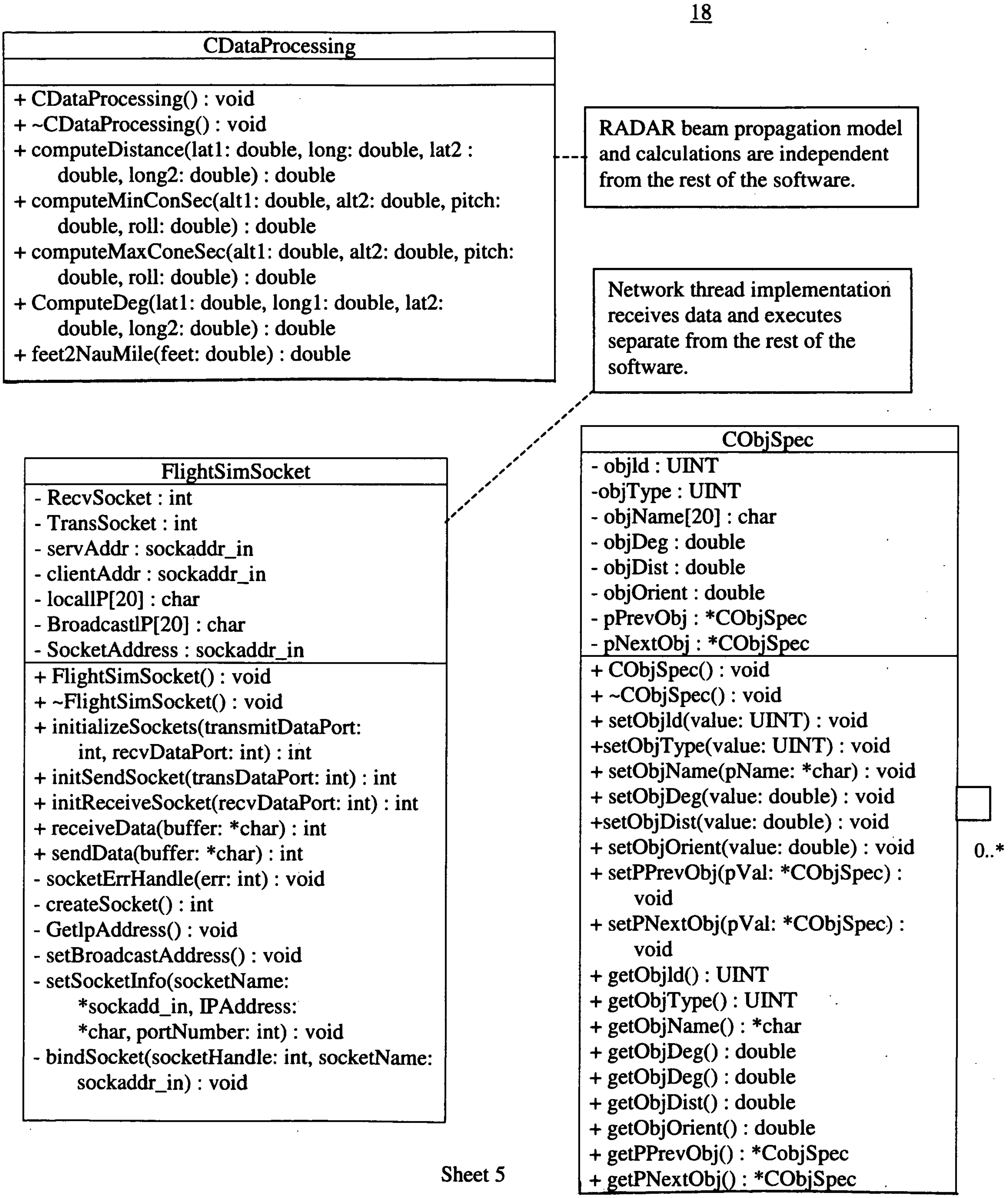
RadarCfg

- iModeSpeed : UINT
- iRcvrGain : UINT
- iStab : UINT
- iEraseGPI : UINT
- iPersist : UINT
- iRange : UINT
- cxHelo : UINT
- cyHelo : UINT
- cyHeloOffset : UINT

+ RadarCfg(rModeSpeed: UINT, rRcvrGain: UINT, rStab: int, rEraseGPI: int, rPersist: UINT, rRange:UINT, rXPos: UINT, rYPos: UINT, rYOffset: UINT) : void
+ setModeSpeed(rParam: UINT) : void
+ setRcvrGain(rParam: UINT) : void
+ setStab(rParam: UINT) : void
+ setEraseGPI(rParam: UINT) : void
+ setPersist(rParam: int) : void
+ setRange(rParam: UINT) : void
+ setHeloXPos(rParam: UINT) : void
+ setHeloYPos(rParam: UINT) : void
+ setHeloYOffset(rParam: UINT) : void
+ getModeSpeed() : UINT
+getRcvrGain() : UINT
+ getStab() : UINT
+ getEraseGPI() : UINT
+ getPersist() : UINT
+ getRange() : UINT
+ getHeloXPos() : UINT
+ getHeloYPos() : UINT
+ ~RadarCfg() : void

OIPE IAP75
SEP 0 6 2005
PATENT & TRADEMARK OFFICE

FIG 4



CDataProcessing

+ CDataProcessing() : void
+ ~CDataProcessing() : void
+ computeDistance(lat1: double, long: double, lat2 : double, long2: double) : double
+ computeMinConSec(alt1: double, alt2: double, pitch: double, roll: double) : double
+ computeMaxConeSec(alt1: double, alt2: double, pitch: double, roll: double) : double
+ ComputeDeg(lat1: double, long1: double, lat2: double, long2: double) : double
+ feet2NauMile(feet: double) : double

RADAR beam propagation model and calculations are independent from the rest of the software.

Network thread implementation receives data and executes separate from the rest of the software.

FlightSimSocket

- RecvSocket : int
- TransSocket : int
- servAddr : sockaddr_in
- clientAddr : sockaddr_in
- localIP[20] : char
- BroadcastIP[20] : char
- SocketAddress : sockaddr_in

+ FlightSimSocket() : void
+ ~FlightSimSocket() : void
+ initializeSockets(transmitDataPort: int, recvDataPort: int) : int
+ initSendSocket(transDataPort: int) : int
+ initReceiveSocket(recvDataPort: int) : int
+ receiveData(buffer: *char) : int
+ sendData(buffer: *char) : int
- socketErrHandle(err: int) : void
- createSocket() : int
- GetIpAddress() : void
- setBroadcastAddress() : void
- setSocketInfo(socketName: *sockadd_in, IPAddress: *char, portNumber: int) : void
- bindSocket(socketHandle: int, socketName: sockaddr_in) : void

CObjSpec

- objId : UINT
-objType : UINT
- objName[20] : char
- objDeg : double
- objDist : double
- objOrient : double
- pPrevObj : *CObjSpec
- pNextObj : *CObjSpec

+ CObjSpec() : void
+ ~CObjSpec() : void
+ setObjId(value: UINT) : void
+setObjType(value: UINT) : void
+ setObjName(pName: *char) : void
+ setObjDeg(value: double) : void
+setObjDist(value: double) : void
+ setObjOrient(value: double) : void
+ setPPrevObj(pVal: *CObjSpec) : void
+ setPNextObj(pVal: *CObjSpec) : void
+ getObjId() : UINT
+ getObjType() : UINT
+ getObjName() : *char
+ getObjDeg() : double
+ getObjDeg() : double
+ getObjDist() : double
+ getObjOrient() : double
+ getPPrevObj() : *CobjSpec
+ getPNextObj() : *CObjSpec